TRANSACTIONS
OF THE
ILLUMINATING ENGINEERING SOCIETY

FOUNDED IN LONDON 1909

INCORPORATED 1930

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VOLUME X.—No. 9
SEPTEMBER, 1945

32 VICTORIA ST
LONDON, SW1

SESSION 1944—1945

THE I.E.S. COUNCIL

President :—E. Stroud, F.I.E.S.

Vice-Presidents :—H. C. Weston, F.I.E.S.; D. Chandler, F.I.E.S.; Howard Long, M.I.E.E., F.I.E.S.

Members of Council*:—

Elected Members :—

H. S. Allpress, P. V. Burnett, J. B. Carne, H. E. Chasteney, W. J. G. Davey, W. E. J. Drake, S. I. Ellis, F. S. Ette, W. Hetherington, J. G. Holmes, W. C. Huston, R. Maxted, F. F. Middleton, E. G. Phillips, C. W. M. Phillips, R. P. Sayers, Geo. Smith, W. R. Stevens, J. F. Stanley, J. M. Waldram, Dr. J. W. Whitaker, T. Wilkie, G. T. Winch.

Ex Officio Representatives of Areas :—

Midland Area : A. J. Pashler
Nth.-East. Area : E. C. Lennox
Nth.-West. Area : N. C. Hodson
Nth.-Mid. Area : E. C. Walton
Scottish Area : E. M. Hood
Sth. Wales Area. Professor T. David Jones
Western Area : E. J. Ireland

Hon. Treasurer :—
N. V. Everton

Hon. Secretary :—
J. S. Dow.

*In addition, all Past Presidents of the Society are *ex-officio* Members of Council.

Secretary : Raymond Pye.

Committees

General Purposes Committee: E. Stroud *(President)*, N. V. Everton *(Hon. Treasurer)*, J. S. Dow *(Hon. Secretary)*, R. O. Ackerley, H. Buckley *(Past-Presidents)*, H. C. Weston, D. Chandler *(Vice-Presidents)*; Howard Long *(Midland Area)*, E. J. Ireland *(Western Area)*.

Papers Committee: H. Buckley, P. V. Burnett, J. G. Holmes, R. Maxted, F. C. Smith, W. R. Stevens, E. C. Walton, H. C. Weston.

Lighting Reconstruction *(ad hoc)* Committee:—R. O. Ackerley *(Chairman)*, Dean Chandler, Dr. S. English, Percy Good, W. J. Jones, Dr. C. C. Paterson, F. C. Smith, Dr. J. W. T. Walsh, Sir Duncan Wilson.

Areas Joint Committee:—

Representatives of Areas: *(Midland Area)* A. J. Pashler, *(North Eastern Area)* E. C. Lennox, *(North-Western Area)* N. C. Hodson, *(North-Midland Area)* E. C. Walton, *(Scottish Area)* E. M. Hood, *(South Wales Area)* B. C. Wilkins, *(Western Area)* E. J. Ireland.

Council's representatives: F. C. Smith, R. O. Ackerley, H. Buckley.

(N B.—The President, Hon. Secretary, and Hon. Treasurer are *ex-officio* members of all committees.)

PROVISIONAL SYLLABUS OF MEETINGS

(SESSION 1945-1946)

SESSIONAL MEETINGS IN LONDON

Unless otherwise announced, meetings will be held at **6 p.m.**

1945.

Tuesday, Oct. 9th. Address by the President (Mr. H. C. Weston). (*To be held at the School of Hygiene and Tropical Medicine, Keppel Street, (Gower Street), London, W.C.*1.) **5.30 p.m.** for **6 p.m.**

Wednesday, Oct. 10th. Demonstration of **Film on Industrial Lighting** (" Let us See "). (*At the E.L.M.A. Lighting Service Bureau, 2, Savoy Hill, London, W.C.*2.) **5 p.m.**

Tuesday, Nov. 13th. Bright Light Sources (Part II), by Dr. J. N. Aldington. (*To be held at the E.L.M.A. Lighting Service Bureau, 2, Savoy Hill, London, W.C.*2.) **6 p.m.**

Tuesday, Dec. 11th. The New I.E.S. Code, by Mr. H. C. Weston. (*To be held at the E.L.M.A. Lighting Service Bureau, 2, Savoy Hill, London, W.C.*2.) **6 p.m.**

1946.

Tuesday, Jan. 8th.
Tuesday, Feb. 12th.
Tuesday, Mar. 12th
Tuesday, April 9th.
} **Illuminating Engineering in Railway Service, Joint Meeting with the R.I.B.A., The Design and Performance of Industrial Lighting, The Standard Specification for Street Lighting, etc.**

May .... **The I.E.S. Convention** and **Annual General Meeting.**

BATH AND BRISTOL CENTRE [WESTERN AREA]

(*Hon. Secretary:* Mr. A. E. Hayward, 7-8, Wine Street, Bath.)

Meetings will commence at **7.0 p.m.**, *those in Bath being held in the Pump Rooms, and those in Bristol at the places stated.*

1945.

Sept. 4th. Stage Lighting, by Mr. R. G. Williams. (*To be held in the Pump Room, Bath.*)

Oct. 19th. Infra-Red Radiation (Speaker to be announced). (*To be held at Radiant House, Bristol.*)

Nov. 2nd. Address by the President (Mr. H. C. Weston). (*At Radiant House, Bristol.*)

Dec. 7th. Maintenance and Efficient Operation of a Fluorescent Lighting Installation, by A. L. Randall. (*Electricity Showrooms, Bath.*)

1946.

Jan. 4th. Hospital and School Lighting, by Mr. L. C. Rettig. (*At Radiant House, Bristol.*)

Feb. 1st. Church Lighting, by Mr. E. J. Ireland. (*At the Electricity Showrooms, Bath.*)

Mar. 1st. Commercial Lighting (Speaker to be announced). (*At Radiant House, Bristol.*)

April 5th. Vision and the Eye, by Dr. Drummond Currie. (*At the Electricity Showrooms, Bath.*)

May 3rd. Annual General Meeting. (Chairman's Review.) (*At Radiant House, Bristol.*)

BIRMINGHAM CENTRE [MIDLAND AREA]

(*Hon. Secretary:* C. J. Allderidge, 125, Moor Street, Birmingham.)

Meetings will be held at the Imperial Hotel, Temple Street, Birmingham, at **6 p.m.**

1945.

Oct. 5th. Address by the Chairman (Mr. F. F. Middleton).

Nov. 2nd. Circuits for Discharge Lamps, by Mr. J. N. Hull. **Joint Meeting with the Association of Supervising Electrical Engineers, Birmingham & District Branch.**

Dec. 14th. Mercury Vapour Projector Lamps, by Mr. H. K. Bourne.

PROVISIONAL SYLLABUS OF MEETINGS (SESSION 1945—1946)

1946.

Jan. 4th. The Physical Nature of Light, by Mr. H. J. Cull.

Jan. 16th. Joint Meeting with the Association of Supervising Electrical Engineers Coventry Branch. (*At the Coventry Technical College, at* **7.0 p.m.**)

Feb. 1st. The Measurement of Light, by Dr. J. W. T. Walsh.

Mar. 1st. Annual General Meeting and Address by the President. (Mr. H. C. Weston.)

April 5th. Address by Dr. S. English.

May 3rd. Debate. That Works Engineers Should Plan Their Own Lighting Schemes.

CARDIFF CENTRE [SOUTH WALES AREA]

(*Hon. Secretary :* S. G. Turner, Mervyn House, Frederick Street, Cardiff.)

1945.

Oct. 5th. The Measurement of the Photometric Properties of the Upper Atmosphere, by Mr. J. M. Waldram. (*To be held at Sth. Wales Inst., E. Cardiff.*) **3.0 p.m.**

Oct. 27th. Lighting in Hazardous Places, by Mr. S. W. Richards. (*Joint Meeting with the N.A.C.M.*) (*To be held at the Sth. Wales Institute, E. Cardiff.*) **5 p.m.**

Nov. 8th. Applied Colour Lighting, by Mr. R. Gillespie Williams. (*To be held at The Town Hall, Newport.*) **3.0 p.m.**

Dec. 6th. Mercury Vapour Projector Lamps, by Mr. H. K. Bourne. (*To be held at the Sth. Wales Inst., E. Cardiff.*) **3.15 p.m.**

1946.

Jan. 10th. Address by the President (Mr. H. C. Weston). (*To be held at Cardiff Corporation Showrooms.*) **3.0 p.m.**

Feb. 7th. Shop Window Lighting. (*At Pontypridd.*)

Mar. 7th. Lighting—Past, Present and Future, by Mr. W. J. Jones. (*To be held at The Recedon Smith Lecture Theatre, Cardiff.*) **3.0 p.m.**

April 4th. Factory Lighting and Special Problems. (*To be held at Bridgend.*) **3.15 p.m.**

April 25th. Annual General Meeting and Luncheon. (To be arranged.)

EDINBURGH CENTRE [SCOTTISH AREA]

(*Hon. Secretary :* S. G. Batt, 8, George Street, Edinburgh, 2.)

Meetings will be held at the Heriot-Watt College, Chambers Street, Edinburgh, 1, *at* **6.0 p.m.**

1945.

Oct. 5th. The Civic Theatre : Its Lighting and Planning, by Mr. L. G. Applebee.

Oct. 24th. Some Factors Affecting the Design of Electric Lighting Installations for Building Interiors, by Mr. R. O. Ackerley. (*By invitation of the I.E.E. Scottish Centre.*)

Nov. 9th. Polarized Light—Some Practical Applications, by Dr. J. H. Nelson.

Dec. 7th. Illuminating Glassware, by Dr. S. English.

1946.

Jan. 11th. Daylight Design Practice, by Mr. W. Allen. (*Joint Meeting with the Edinburgh Architectural Association.*)

Feb. 8th. The Design and Characteristics of Lighting Fittings, by Mr. W. R. Stevens.

Mar. 1st. Paper on Fluorescent Lamp Lighting. (To be arranged.)

April 5th. Annual General Meeting.

GLASGOW CENTRE [SCOTTISH AREA]

(*Hon. Secretary :*)

Unless otherwise stated Meetings will be held at the Institute of Engineers and Shipbuilders, 39, *Elmbank Street, Glasgow,* C.2, *at* **7.0 p.m.**

1945.

Oct. 4th. Gas Street Lighting, by Mr. W. J. G. Davey. (*To be held at Corporation Gas Showrooms,* 522, *Sauchiehall Street, Glasgow.*)

Oct. 23rd. Interior Lighting, by Mr. R. O. Ackerley. (*Joint Meeting with the Institution of Electrical Engineers, Scottish Centre.*)

Nov. 1st. Address by the President (Mr. H. C. Weston).

Dec. 6th. Methods of Glass Manufacture ; and its Properties and Composition, by Mr. J. G. Holmes.

PROVISIONAL SYLLABUS OF MEETINGS (SESSION 1945—1946)

1946.
Jan. 10th. Lighting and Hotel Services on Modern Liners, by Mr. T. S. Wood.
Feb. 7th. The Trend of Fittings for Fluorescent Lamps, by Mr. W. R. Stevens.
Mar. 7th. Any Questions? Annual General Meeting.

LEEDS CENTRE [NORTH MIDLAND AREA]

(*Hon. Secretary:* Eric Smith, 28, St. Paul's Street, Leeds.
Meetings will be held at the Electricity Showrooms, The Headrow, Leeds, at **6.0. p.m.**

1945.
Oct. 1st. Address by the Chairman (Mr. T. C. Holdsworth).
Nov. 7th. Motor Car Headlamps and the Prevention of Dazzle, by Dr. J. H. Nelson.
Dec. 10th. Street Lighting, by Mr. N. Schofield.
1946.
Jan. 7th. Some Aspects of Lighting in the Engineering Industry, by Mr. F. L. Cator.
Feb. 4th. Illumination and Illusion, by Mr. P. Hartill.
Mar. 4th. Brightness, by Dr. W. D. Wright.
April 1st. Engineering Applications of Polarised Light, by Dr. Ward.
April 30th. Annual General Meeting. Address by the President (Mr. H. C. Weston).

LEICESTER CENTRE [MIDLAND AREA]

(*Hon. Secretary:* W. N. Coulson, 5, Campbell Street, Leicester.)
Meetings will be held at the Demonstration Theatre of the City of Leicester Electricity Department, Charles Street, Leicester, at **6.0 p.m.**

1945.
Oct. 2nd. Automobile Lighting, by Dr. J. H. Nelson.
Nov. 6th. Lighting from the Contractor's Viewpoint (Speaker to be announced.)
Dec. 4th. The Performance and Characteristics of Tungsten Filament Lamps, by Mr. B. Blow.
Jan. 1st. Questions Night.
Feb. 5th. Works Visit. (Details to be announced.)
Mar. 5th. Glassware Manufacture with Particular Reference to the Lighting Industry, by Dr. W. M. Hampton.
April 2nd. Infra-Red Radiation. (Speaker to be announced.)
May 7th. Annual General Meeting.
June 4th. Paint as Related to the Lighting Industry. (Speaker to be announced.)

LIVERPOOL CENTRE [NORTH WESTERN AREA]

Hon. Secretary: K. R. Mackley, 24, Dale Street, Liverpool, 2.)
Meetings will be held in the Liverpool Corporation Electricity Showrooms, Whitechapel, Liverpool, at **6.0. p.m.**

1945.
Oct. 3rd. Illumination Design, by Mr. E. B. Sawyer.
Nov. 8th. Cold Cathode Light Sources, by Mr. H. A. Miller.
Dec. 5th. The Place of Science in the Art of Lighting, by Mr. R. O. Ackerley.
1946.
Jan. 2nd. Films. "Let us See" and "Street Lighting."
Feb. 6th. Industrial Lighting, by Mr. Imrie-Smith.
Mar. 6th. "Coloured and Directional Light as applied to the Stage," by Mr. L. G. Applebee.
April 3rd. Light and the Eye, by Mr. W. J. Wellwood Ferguson.
May 1st. Colour and its Measurement—A new Colorimeter, by Mr. W. Harrison.

MANCHESTER CENTRE [NORTH WESTERN AREA]

(*Hon. Secretary:* Alan H. Owen, 11, Albert Square, Manchester.)
Meetings in the Reynolds Hall, College of Technology, Sackville Street, Manchester, at **6.0 p.m.**

1945.
Oct. 11th. Address by the President (Mr. H. C. Weston).
Nov. 8th. The Lighting of Public Buildings, by Mr. W. T. F. Souter.
Dec. 6th. Bright Light Sources. Part II: Electric Discharge Lamps, by Mr. J. N. Aldington. (*Joint Meeting with the Institution of Electronics in the Great Hall, Manchester College of Technology,* **at 6.30 p.m.**)

PROVISIONAL SYLLABUS OF MEETINGS (SESSION 1945—1946)

1946.

Jan. 10th. Lighting Pros and Cons, by Mr. F. F. Middleton.
Feb. 7th. The Practical Application of the Lighting Code to the Spinning and Weaving Section of the Cotton Trade, by Mr. N. C. Hodson.
Mar. 7th. Coloured and Directional Light as Applied to the Stage, by Mr. L. G. Applebee.
April 4th. Colour and the Eye, by Dr. J. H. Shaxby.

NEWCASTLE CENTRE [NORTH EASTERN AREA]

Hon. Secretary : A. J. Ogle, Carliol House, Newcastle-on-Tyne.)

Meetings will be held in the Minor Hall, Oxford Street, Newcastle-upon-Tyne, at **5.45. p.m.**

1945.

Oct. 3rd. Domestic Lighting, by Mr. T. O. Freeth.
Nov. 7th. Photometry, by Mr. E. H. Elliott.
Dec. 5th. Store and Shop Lighting, by Messrs. G. R. Hanson and J. Rolph.

1946.

Jan. 9th. Address by the President. (Mr. H. C. Weston).
Feb. 6th. School Lighting, by Mr. T. S. Jones.
Mar. 6th. Outdoor Lighting Practice, by Mr. S. D. Lay.
April 3rd. Annual General Meeting.

NOTTINGHAM CENTRE [MIDLAND AREA]

Hon. Secretary : C. S. Caunt, 62, Thackerays Lane, Woodthorpe, Nottingham.)

Meetings will be held in the Lecture Theatre of the City of Nottingham Gas Department, Parliament Street, Nottingham, at **5.30 p.m.**

1945.

Sept. 7th. Annual General Meeting. Address by the Chairman (Mr. R. G. Williams).
Oct. 5th. A Symposium—Light-Measurement, Control and Application, by Messrs. C. S. Caunt, R. J. W. Briddon, L. D. Schofield.
Nov. 2nd. Signs and Display Advertising, by Mr. K. C. Oldham.
Dec. 7th. Modern Floodlighting Practice, by Mr. W. M. Peirce. (*Meeting place to be arranged.*)

1946.

Jan. 4th. Motor Car Lamps, by Dr. J. H. Nelson.
Feb. 1st. Electrical Distribution as Applied to Illuminating Engineering, by Mr. W. F. Perkins.
Mar. 1st. Lighting in Relation to Safety and Vision, by Mr. E. W. Murray.
April 5th. Modern Stage and Colour Lighting, by Mr. R. Gillespie Williams. (For Members only.) (*Meeting place to be arranged.*)

SHEFFIELD CENTRE [NORTH MIDLAND AREA]

(*Hon. Secretary :* D. H. Fox, Howard Gallery, Chapel Walk, Sheffield.)

Meetings will be held at the Sheffield University, Western Bank, Sheffield, 10, *at* **6.0 p.m.**

1945.

Oct. 9th. Luncheon and Address by the Chairman (Dr. A. J. Holland). (*At the Royal Victoria Hotel, Sheffield, at* **12.30 p.m.**)
Oct. 17th. Visit to B.T.H. Co., Ltd., Chesterfield Glass Works.
Nov. 5th. Illumination and Illusion, by Mr. P. Hartill.
Dec. 3rd. Public Lighting, by Mr. N. Schofield.

1946.

Jan. 23rd. Lighting in the Glass Industry, by Mr. J. K. Marsden. (*Joint Meeting with the Yorkshire Section of the Society of Glass Technology, at Woods Bros. Glass Works, Barnsley.*)
Feb. 4th. Short Cuts in Illuminating Engineering, by Mr. W. J. G. Davey.
Mar. 5th. Brightness, by Dr. W. D. Wright.
April 8th. Photometry in Theory and Practice, by Mr. J. S. Preston.
April 29th. Address by the President (Mr. H. C. Weston).

PROVISIONAL SYLLABUS OF MEETINGS (SESSION 1945—1946)

BRADFORD GROUP [NORTH MIDLAND AREA]

(*Hon. Secretary :* A. J. HUTCHINSON, 27, Bolton Road, Bradford.)

Meetings will be held in Bradford Electricity Department Showrooms, Sunbridge Road, Bradford, at **6.45 p.m.**

[To be announced]

THE GLOUCESTER AND CHELTENHAM GROUP [WESTERN AREA]

(*Hon. Secretary :* I. S. FREEMANTLE, 11, St. Aldate Street, Gloucester.)

Meetings will be held alternately at Gloucester and Cheltenham.

1945.

Sept. 20th. Annual General Meeting. (*Gloucester.*)
Oct. 18th. Brains Trust. (*Cheltenham.*)
Nov. 15th. The Search for High Efficiency Light Sources, by MR. J. F. EDGELL. (*Gloucester.*)
Dec. 20th. Illuminating Advertising, by MR. E. G. PERNET. (*Cheltenham.*)

1946.

Jan. 17th. Factors Affecting the Efficient Working of Gas Street-lighting Installations, by MR. A. G. HOLTAM. (*Gloucester.*)
Feb. 17th. Stage Lighting, by MR. R. GILLESPIE WILLIAMS. (*Cheltenham.*)
Mar. 21st. Trend of Development in Fluorescence, by MR. D. JONES. (*Gloucester.*)
April 18th. Lecture on Gas Applications. (To be arranged later.) (*Cheltenham.*)
May 16th. Visit to Gloucester or Cheltenham Gas Works (*Afternoon*). **Annual General Meeting** (*Evening*).

HALIFAX GROUP [NORTH MIDLAND AREA]

(*Hon. Secretary :* H. W. LODGE, Public Lighting Dept., Mulcture Hall Road, Halifax.)

[To be announced]

HUDDERSFIELD GROUP [NORTH MIDLAND AREA]

(*Hon. Secretary :* E. WOOD, 11, Long Grove Avenue, Dalton, Huddersfield.)

Meetings will be held in the Electricity Showrooms, Market Street, Huddersfield, at **7 p.m.**

1945.

Sept. 4th. Stage Lighting, by MR. L. G. APPLEBEE.
Oct. 2nd. Planning for Recreation—with Special Reference to Lighting, by MR. E. P. MAWSON.
Nov. 6th. Motor Car Headlamps and the Prevention of Dazzle, by Dr. J. H. NELSON.
Dec. 4th. Power Factor and The Lighting Engineer, by DR. E. C. WALTON.

1946.

Jan. 8th. Some aspects of Lighting in the Engineering Industry, by MR. F. L. CATOR.
Feb. 5th. Street Lighting with Special Reference to Gas, by MR. W. J. G. DAVEY.
Mar. 12th. Design and Appraisal of Lighting Fittings, by MR. W. R. STEVENS.
April 2nd. Engineering Application of Polarised Light, by MR. J. WARD.
May 7th. Vision, by MR. H. L. WALKER.

TEES-SIDE GROUP [NORTH EASTERN AREA]

(*Hon. Secretary :* R. H. BATEY, 14, Preen Drive, Ackham, Middlesbrough.)

Meetings will be held in the Cleveland Scientific and Technical Institution, Corporation Road, Middlesbrough, at **6 p.m.**

1945.

Oct. 4th. Neon Signs, by MR. K. J. OLDHAM.
Nov. 21st. Industrial Lighting, by MR. STUART D. LAY.
Dec. 19th. Brains Trust Meeting.

1946.

Jan. 16th. Address by Chairman of Group (MR. E. ANDERSON).
Feb. 20th. A Paper on **Street Lighting.**
Mar. 20th. The Poetry of Light, by MR. R. GILLESPIE WILLIAMS.

RECOMMENDATIONS TO AUTHORS OF PAPERS FOR PRESENTATION BEFORE THE SOCIETY

(1) Nature of Papers

Papers embodying results of original investigations or researches are particularly welcome.

The Council is, however, prepared to consider papers of a descriptive or statistical nature on any aspect of illumination.

(2) Date of Delivery

Papers should preferably reach the Secretary not less than three months before the dates of the meetings at which they are intended to be read.

(3) Length of Papers

Papers should be written as concisely as possible and should not be longer than 5,000-6,000 words; this length may be extended only when subjects demand specially detailed treatment. Shorter contributions on detailed problems are also acceptable either for presentation at "problem meetings" or for publication in the Transactions.

A short summary of contents (100 to 250 words) should accompany each paper, in a form suitable for use as an abstract.

(4) Preparation of Manuscripts

Manuscripts should be preferably typed on *one side of the paper only*, and should be presented in duplicate. Subject matter should be arranged in logical sequence, with headings and subheadings clearly indicated. Unduly long paragraphs and sentences should be avoided. A new heading should be commenced whenever a new topic is introduced.

References to literature should be made in the text by means of numbers. All such references should appear in order of date at the end of the paper—author, periodical, year, number and page being mentioned in this order.

(5) Illustrations

Drawings should be executed to a large scale and in black ink on white cardboard in a form suitable for reproduction. Photographs for printing purposes should be contrasty positive prints with a glazed surface. Care should be taken that any lettering or figures intended to appear in the illustration are of adequate size. For a reduction in scale of one-third to one-half, figures should be not less than 3-16 in. deep. Where figures or letters appear within the boundaries of a sketch for reproduction in the block, special care should be taken to ensure that they are of adequate size and neatly executed; where

this presents difficulty they should be indicated in pencil so that they may be executed in ink by a draughtsman before the block is made.

(6) Lantern Slides

Whilst the number of lantern slides shown in illustration of papers naturally varies according to the subject, experience suggests that the number should be limited to about a dozen when careful scrutiny by the audience is demanded. Intricate and complex detail, such as is difficult to follow, especially by those at a distance from the screen, should be avoided. As a rough guide, it is suggested that not more than 20 lines of printed matter should appear on one lantern slide and that letters and figures should be not less than 1-16 in. in depth. In general tables should not be presented in the form of lantern slides.

Photographs and diagrams intended for use in the epidiascope should be executed on matt paper.

(7) Mode of Presentation of Papers

Papers should preferably not be read in extenso at meetings. Authors should present summaries in their own words, in general occupying 30 to 40 minutes (including time spent in the showing of lantern slides or demonstrations).

(8) Acknowledgements

Technical descriptions of advances in sources of light or apparatus used therewith may with advantage be included in papers, but no trade names should be mentioned, nor should the names of manufacturers be stated, except in the form of a general acknowledgement of information or assistance rendered, which should be inserted at the conclusion of the paper. No trade names or names of firms should appear in any illustrations, or on the lantern slides used to illustrate a paper or discussion before the Society.

Authors are entitled to receive, free of cost, up to 50 copies of the issue of the Transactions in which their contributions appear.

The Leon Gaster Memorial Premium, to the value of £10 10s., is awarded annually for the best paper or contribution submitted to and published by the Society during the Session. (The premium may be withheld in any year in the event of no contribution of sufficient merit being received by the Society.)

Additions to List of Members

The following applicants have been duly elected by the Council to membership in the Society, and their names have been added to the list of members:—

SUSTAINING MEMBERS:

Electrical Components, Ltd., ... *Representative*: Mr. L. Wall, 102, Snow Hill, BIRMINGHAM 4.

Bolton Corporation Lighting Department ...*Representative*: Mr. J. H. Morrison, Marsden Road, Bolton, LANCS.

CORPORATE MEMBERS:

Bastin, D. J. ..... 4, Orchard Close, Longford, GLOUCESTER.

Collins, E. ..... Edwinton, Wenvoe, near CARDIFF.

Grant, L. C. ..... Mount Clwyd, Dyserth, NORTH WALES.

James, H. ..... 6, Cranleigh Gardens, Loughton, ESSEX.

Litherland, W. F. ... "Edale," Grange Road, Saltford, SOMERSET.

Mason, W. P. ..... "Burma," Eva Grove, Clayton, Newcastle, STAFFS.

Maurice, H. M. ..... Newton Croft, Woodhouse, SHEFFIELD.

Stafford, R. E..... 11, King Cross Street, Halifax, YORKS.

COUNTRY MEMBERS:

Lee, T. C., Lt., R.N., H.M.S. Cockade, c/o G.P.O., London.

TRANSFER TO CORPORATE MEMBERSHIP:

Eshelby, R. A. ..... "Tithe Barn," Red Lane, Claygate, SURREY.

The Illuminating Engineering Society is not, as a body, responsible for the opinions expressed by individual authors or speakers.

With a view to avoiding possible confusion with other publications, reference to these Transactions should be in the form :—" Trans. Illum. Eng. Soc. (London)."